

The Bean Bag

A newsletter to promote communication among research scientists concerned with the systematics of the Leguminosae/Fabaceae

Number 46

November 1998

From the Editors

Barbara Mackinder and Gwilym Lewis

The Bean Bag is designed to promote communication among research scientists concerned with legume systematics. To achieve this goal *The Bean Bag* is issued in November of each year and features six columns: From the Editors, News (meetings, major events, announcements, etc.), Latin American Legume Report, Nodulation and Nitrogen Fixation (new nodulation records), Gleanings, and Recent Legume Literature. Data in the Gleanings column are derived from questionnaire sheets which Readers complete and return. If you have news about legume systematics, send it to us for this column. The Recent Legume Literature column contains published research papers of specific interest to Bean Bag Readers and is derived from Readers contributions in conjunction with references from The Kew Record (Kew's current awareness list of taxonomic literature). Recent is defined as up to 18 months old. Specific interest to Bean Bag Readers is defined as research papers of interest to a worldwide group of legume systematic botanists. We encourage Bean Bag Readers to send us notices, observations, etc.

The Bean Bag and the Directory can now be delivered to Readers via e-mail. If you wish to have your copies e-mailed to you, please send the following standard e-mail message

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NEWS

Editorship Of The Bean Bag Number 46 (November 1998)

Barbara Mackinder

Barbara Mackinder is on a 12 months sabbatical at the Royal Botanic Gardens, Edinburgh (Scotland) studying for a Masters degree in Plant Taxonomy and Biodiversity. This particular issue is jointly edited by Mackinder and Lewis (RBG, Kew). All correspondence, email etc. should continue to be directed to B. Mackinder at RBG, Kew.

The Rupert Barneby Award

James L. Luteyn

The New York Botanical Garden is pleased to announce that Basil Stergios of the Universidad Nacional Experimental de Los Llanos Occidentales "Ezequiel Zamora", Mesa de Cavacas, Venezuela, is the recipient of the 1997 Rupert Barneby Award. Dr Stergios will be working on the general Caesalpinoid legumes of Latin America and floral treatments for Flora Neotropica and Flora of the Guianas.

The New York Botanical Garden also invites applications for the 1998 Rupert Barneby Award. The award of \$1,000 is to assist researchers to visit The New York Botanical Garden to study the rich collection of *Leguminosae*. Anyone interested in applying for the award should submit their curriculum vitae and a detailed letter describing the project for which the award is sought. Travel to NYBG should be planned for sometime in 1999. The letter should be addressed to Dr. James L. Luteyn, Institute of Systematic Botany, The New York Botanical Garden, Bronx, NY 10458-5126 USA, and received no later than December 1, 1998. Announcement of the recipient will be made by December 15th. Anyone interested in making a contribution to THE RUPERT BARNEBY FUND IN LEGUME SYSTEMATICS, which supports this award, may send their check, payable to The New York Botanical Garden, to Dr. Luteyn.

Leucaena: Taxonomic Monograph and Genetic Resources Handbook

Colin E. Hughes

Most foresters and agronomists who work in the tropics will, at some point, have set eyes on a *Leucaena* tree. In the majority of cases they will have observed a tree of one of a handful of genetically uniform varieties of one species, *Leucaena leucocephala*. It is a ubiquitous, small, seedy tree that occurs in most tropical countries. Whether that tree is viewed as a valuable asset providing basic products to smallholder farmers, as a salvation for sloping lands, as the 'alfalfa of the tropics' to commercial beef producers, or cursed as an undesirable alien weed depends on the perspective of the observer. *Leucaena* means different things to foresters, agronomists, pasture production scientists, veterinarians, botanists, ecologists and conservation biologists. However, for almost all, *Leucaena* means *Leucaena leucocephala*. Apart from those who live in the native home of *Leucaena* in Mexico and Central America and a small number of specialists, few are fully aware of the diversity of species which exists within the genus. There are 22 recognised species. They span 40 degrees of latitude and 2500m in altitude and grow under varied climatic and soil conditions. They have diverse sizes, tree forms, growth rates, pest tolerances, site adaptabilities, phenologies, wood and leaf qualities and weedy attributes. They are highly crossable and form hybrids with ease. Several show high levels of within species diversity. All this diversity has remained poorly known and, until recently, largely untapped. Two new complementary publications, a *Taxonomic Monograph* and a *Genetic Resources Handbook* aim to document what is known about diversity within *Leucaena* and present it as a whole to a wider audience.

The *Monograph* is volume 55 of *Systematic Botany Monographs* published by the American Society of Plant Taxonomists. Copies (\$32 for US orders, \$34 for non US orders) are available from Systematic Botany Monographs, University of Michigan Herbarium, North University Building, Ann Arbor, MI 48109-1057, USA.

The *Handbook* includes chapters on systematics, species characteristics, ethnobotany and indigenous domestication, hybrids, germplasm collections, seed collection, processing, storage and pretreatment, conservation, domestication, identification, and a series of species accounts which include more detailed information, along with full botanical drawings and distribution maps for all species in the genus. It is number 37 in the Oxford Forestry Institute, Tropical Forestry Paper series, is softbound, 280 pages in length, and includes 8 pages of colour plates and 68 figures. It is available in **English and Spanish FREE** to institutions in developing countries, as part of the UK Department For International Development Forestry Research Programme's policy of disseminating research results as widely as possible. For institutions and individuals in developed countries, the price is £20 plus handling and postage, with a 50% discount for students. Requests to: Colin Hughes, Dept. of Plant Sciences, University of Oxford, S. Parks Rd, OXFORD, OX1 3RB, UK.

Fax: +44 (0)1865 275074. Email: colin.hughes@plants.ox.ac.uk

Nodulation and Nitrogen Fixation

(Legume Nodulation Reports not in Allen and Allen (1981))

Joseph H. Kirkbride, Jr.

<i>Taxon</i>	<i>Status</i>	<i>Source</i>
<i>Acacia adsurgens</i> Maiden & Blakely	+	2
<i>Acacia ampliceps</i> Maslin	+	2
<i>Acacia caven</i> (Molina) Molina	+	5
<i>Acacia cochliacantha</i> Willd.	+	2
<i>Acacia cyclops</i> A. Cunn. ex G. Don	+	2
<i>Acacia macracantha</i> Humbl. & Bonpl. ex Willd.	+	2
<i>Acacia pennatula</i> (Schdl. & Cham.) Benth.	+	2
<i>Acacia praecox</i> Griseb.	-	5
<i>Acacia pteridifolia</i> Benth.	-	4
<i>Acacia sclerosperma</i> F. Muell.	+	2
<i>Acacia stenophylla</i> A. Cunn. ex Benth.	+	2
<i>Acacia velutina</i> DC.	-	4
<i>Abarema auriculata</i> (Benth.) Barneby & Grimes	+	4
<i>Abarema coclheata</i> (Willd.) Barneby & Grimes	+	4
<i>Abarema turbinata</i> (Benth.) Barneby & Grimes	+	4
<i>Acosmium cardenasii</i> Irwin & Arroyo	-	4
<i>Aeschynomene fluminensis</i> Vell. Conc.	+	4
<i>Albizia decandra</i> (Ducke) Barneby & Grimes	+	4
<i>Albizia niopoides</i> (Benth.) Burkart	+	4
<i>Albizia polycephala</i> (Benth.) Killip	+	4
<i>Andira surinamensis</i> (Bondt.) Splitg. ex Pulle	+	4
<i>Aspalathus linearis</i> (Burm. f.) R. Dahlgren	+	3
<i>Astragalus tener</i> A. Gray	+	1
<i>Ateleia glazioviana</i> Baillon	+	4
<i>Balizia pedicellaris</i> (DC.) Barneby & Grimes	+	4
<i>Bauhinia bauhinioides</i> (Martius) Macbr.	-	4
<i>Bauhinia brevipes</i> Vogel	-	4
<i>Bauhinia forficata</i> Link	-	5
<i>Bauhinia pentandra</i> (Bong.) Vogel ex Steud.	-	4
<i>Bergeronia sericea</i> M. Micheli	+	4
<i>Bocoa mollis</i> (Benth.) Cowan		

Taxon	Status	Source
	-	4
<i>Bowdichia nitida</i> Benth.	+	4
<i>Caesalpinia pluviosa</i> DC.	-	4
<i>Calliandra acapulcensis</i> (Britton & Rose)	+	4
<i>Calliandra houstoniana</i> (Miller) Standley	+	4
<i>Calliandra juzepczukii</i> Standley	+	4
<i>Calliandra macrocalyx</i> Harms	+	4
<i>Calliandra parviflora</i> Benth.	+	4
<i>Campsiandra comosa</i> (Benth.) Cowan	+	4
<i>Chamaecrista desvauxii</i> (Collad.) Killip	+	4
<i>Chamaecrista repens</i> (Vogel) Irwin & Barneby	+	4
<i>Chamaecrista viscosa</i> (H.B.K.) Irwin & Barneby		
var. <i>major</i> (Benth.) Irwin & Barneby	+	4
<i>Chamaecytisus proliferus</i> (L. f.) Link	+	6
<i>Cynometra spruceana</i> Benth.	-	4
<i>Cytisus canariensis</i> Steud.	+	6
<i>Dalbergia hortensis</i> Heringer, Rizzini & Mattos	+	4
<i>Dalbergia spruceana</i> Benth.	+	4
<i>Dimorphandra macrostachya</i> Benth.	+	4
<i>Diploptropis brasiliensis</i> (Tul.) Benth.	+	4
<i>Dipteryx alata</i> Vogel	-	4
<i>Enterolobium maximum</i> Ducke	+	4
<i>Genista stenopetala</i> Webb & Berth.	+	6
<i>Goldmania paraguensis</i> (Benth.) Brenan	+	4
<i>Guibourtia chodatiana</i> (Hassler) J. Leonard	-	4
<i>Hoita macrostachya</i> (DC.) Rydb.	+	1
<i>Hydrochorea corymbosa</i> (Rich.) Barneby & Grimes	+	4
<i>Hymenolobium excelsum</i> Ducke	+	4
<i>Hymenolobium nitidum</i> Benth.	+	4
<i>Lathyrus jepsonii</i> E. Greene	+	1
<i>Lens ervoides</i> (Brign.) Grande	+	2
<i>Lens orientalis</i> (Boiss.) Popov.	+	2
<i>Lonchocarpus virgilioides</i> (Vogel) Benth.	+	4
<i>Lupinus affinis</i> J. Agardh	+	1
<i>Lupinus arizonicus</i> (S. Watson) S. Watson	+	1
<i>Machaerium nictitans</i> (Vell. Conc.) Benth.	+	4
<i>Macrolobium huberianum</i> Ducke	-	4
<i>Macrosamanea pubiramea</i> (Steudel) Barneby & Grimes	+	4
<i>Martiodendron elatum</i> (Ducke) Gleason	-	4
<i>Mimosa arenosa</i> (Willd.) Poiret	+	4
<i>Mimosa dolens</i> Vell. Conc. var. <i>rigida</i> (Benth.) Barneby	+	4
<i>Mimosa guilandinae</i> (DC.) Barneby	+	4
<i>Mimosa pellita</i> H.B. ex Willd.	+	4
<i>Mimosa sensibilis</i> Griseb.	+	4
<i>Mimosa setosa</i> Benth. var. <i>paludosa</i> (Benth.) Barneby	+	4
<i>Mimosa velloziana</i> Martius	+	4
<i>Mimosa xanthocentra</i> Martius	+	4
<i>Mimozyanthus carinatus</i> (Griseb.) Burkart	+	4
<i>Nissolia fruticosa</i> Jacq.	-	4
<i>Ormosia arborea</i> (Vell. Conc.) Harms	+	4
<i>Ormosia holerythra</i> Ducke	+	4
<i>Ormosia nobilis</i> Tul.	+	4
<i>Parkia timoriana</i> (DC.) Merr.	-	4
<i>Parkia velutina</i> Benoist	-	4
<i>Peltophorum dubium</i> (Sprengel) Taubert	-	5

Taxon	Status	Source
<i>Piptadenia adiantoides</i> (Sprengel) Macbr.	+	4
<i>Piptadenia moniliformis</i> Benth.	+	4
<i>Piptadenia viridiflora</i> (Kuntze) Benth.	+	4
<i>Plathymenia reticulata</i> Benth.	+	4
<i>Platymiscium floribundum</i> Vogel	+	4
<i>Prosopis nigra</i> (Griseb.) Hieron	+	5
<i>Pseudopiptadenia psilostachya</i> (DC.) Lewis & Lima	+	4
<i>Pterocarpus erinaceus</i> Poiret	+	4
<i>Pterocarpus lucens</i> Guillemain & Perrottet	+	4
<i>Riedeliella graciliflora</i> Harms	+	4
<i>Senna sophera</i> (L.) Roxb.	-	2
<i>Senna tapajozensis</i> (Ducke) Irwin & Barneby	-	4
<i>Sesbania punicea</i> (Cav.) Benth.	+	1
<i>Stryphnodendron racemiferum</i> (Ducke) W.	+	4
<i>Swartzia glazioviana</i> (Taubert) Glaziou	+	4
<i>Taralea cordata</i> Ducke	-	4
<i>Tetrapleura tetraptera</i> (Schum. & Thonner)	-	4
<i>Thermopsis inflata</i> Cambess.	+	2
<i>Trifolium barbigerum</i> Torr.	+	1
<i>Trifolium cyathiferum</i> Lindl.	+	1
<i>Trifolium gracilentum</i> Torr. & A. Gray.	+	1
<i>Trifolium variegatum</i> Nutt.	+	1
<i>Zygia cataractae</i> (H.B.K.) L. Rico	+	4

Status: +, root nodules reported as present;

-, root nodules reported as absent.

Source:

1. Athar, M. 1996. Observations on nodulation status of some papilionoid species of potential agricultural and forestry value from Sacramento Valley, California. *Taiwania* 41(4): 301-308.
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4. Faria, S.M. da, and H.C. de Lima. 1998. Additional studies of the nodulation status of legume species in Brazil. *Plant and Soil* 200: 185-192.
5. Frioni, L., R. Doderia, D. Malates, and I. Irigoyen. 1998. An assessment of nitrogen fixation capability of leguminous trees in Uruguay. *Applied Soil Ecology* 7: 271-279.
6. Vinuesa, P., J.L.W. Rademaker, F.J. de Bruijn, and D. Werner. Genotypic characterization of *Bradyrhizobium* strains nodulating endemic woody legumes of the Canary Islands by PCR-restriction fragment length polymorphism analysis of genes encoding 16S rRNA (16S rDNA) and 16S-23S rDNA intergenic spacers, repetitive extragenic palindromic PCR genomic fingerprinting, and partial 16S rDNA sequencing. *Applied and Environmental Microbiology* 64(6): 2096-2104.

GLEANINGS

Eds. Note: Proper names in all capital letters are Bean Bag Readers. Their full names and addresses are listed in the Nov 1998 Bean Bag Directory available on the www server of the Royal Botanic Gardens, Kew, United Kingdom. See "From the Editors" for the URL.

Andary, HOSSAERT and MCKEY are studying the exudation of allelochemicals by imbibing seeds of two species of *Sesbania* (*S. drummondii* and *S. vesicaria*) presenting contrasting traits of life history. They need seeds from other species of annual and perennial *Sesbania* as well as from closely related species of other genera of papilionoid Legumes. They also seek seeds of plants of other families presenting tegumentary dormancy (*Rhamnaceae*, *Malvaceae*, *Boraginaceae*).

ANULOV is undertaking a study of the chemotaxonomy and evolution of the *Galegeae*. He needs seeds of *Galegeae* and offers in exchange, reprints and seeds of Russian Legumes.

BENNETT is studying genetic diversity between and within populations of five *Trifolium* species from Turkey. Also studying genetic variation within and between two populations of *Trifolium tomentosum* (woolly clover) from Western Australia and Syria. She needs information on outbreeding rates of *Trifolium* species using RAPD's or electrophoresis, or an alternative method. She is starting work on the problems in PBR legislation - Natural versus Breeder's selection from a wild population, and the advantage of outcrossing clover species in a pasture using traditional quantitative genetics, isozymes and AFLP's. She offers in exchange, advice on use of geographical information systems, ecogeographical analysis and on genetic variation in inbreeding and outcrossing of clovers.

BEYRA-MATOS has completed an account of *Galactia* for the Flora of Cuba and is now working on the taxonomy of endangered and endemic Cuban Legumes.

BEYRA-MATOS and LAVIN have started work on monographic treatments of *Belairia* and *Pictetia*.
Burghardt see HOC

CHEN is studying the classification and phytogeography of *Pueraria* from Yunnan.

DEVINE is studying green manure and living mulch crops for sustainable agriculture. He needs pubescent forms of cow pea for his research.

DIEDERICHSEN with Hanelt, Heller and Kruse are preparing a revision of the *Leguminosae* for a new edition of the Mansfeld World Manual of Cultivated Plants (last edition in German in 1986).

Drewes see HOC

ESPINOSA-HERNANDEZ is studying the effects of interplanting *Lupinus mutabilis* and *Zea mays* with respect to phosphorus nutrition on Andosol of the Sierra Tarasca, Michocacan, Mexico.

EZE is continuing to screen for drought resistance among legume crops in dry savannah areas of SE Nigeria.

FORTUNATO is studying the Tribe *Cassinae* from Paraguay and Argentina. She needs *Galactia*, *Collaea*, *Rhynchosia*, *Eriosema* and *Camptosema* from Argentina and Paraguay, and *Galactia*, *Collaea*, *Rhynchosia*, *Eriosema* from the Neotropics. She offers in exchange, Legume genera from the Patagonia Region.

Hanelt and Heller see DIEDERICHSEN

HOC with Drewes and Burghardt are undertaking a study of the reproductive success under culture of Legumes with forage, food, medicinal or ornamental value (*Phaseolus vulgaris* var *aborigineus*, *Phaseolus augustii* and *Macroptilium* spp
HOSSAERT see Andary

IGNACIMUTHU is studying the prevention of post-harvest loss in Legumes.

KOZACHKOVA is undertaking a PhD, the subject of which is the "Introduction of trees and shrubs from South America on the Black Sea Coast of Caucasus". She needs seeds of South American species of the following genera, *Caesalpinia*, *Calliandra*, *Cassia*, *Erythrina*, *Inga*, *Mimosa*, *Prosopis*, *Adesmia* and *Bauhinia* and of the following species, *Copaifera trapezifolia*, *Dalbergia brasiliensis*, *Holocalyx balsanae*, *Myrocarpus frondosum*, *Parkinsonia aculeata* and *Apuleia leiocarpa*.

Kruse. see DIEDERICHSEN

KUMAR, Sushil is undertaking DNA finger printing of the morphological mutants of pea *Pisum sativum*.

LAVIN see BEYRA-MATOS

LIU (new reader) is beginning a study of the demography of *Chamaecrista linearis* var. *keyensis*.

LOC and VIDAL have revised *Millettieae* (*Sarcodum*, *Afgekia*, *Endosamara*, *Antheroporum*, *Calleyra*, *Aganope*, *Derris*, *Pongamia*, *Craspedolobium*, *Lonchocarpus*, *Millettia* and *Tephrosia*) for the Flora du Cambodge, du Laos et du Vietnam. The editorial work and drawings are underway and it is hoped the account will be published in 1999.

MACKINDER is undertaking a preliminary phylogenetic study of *Berlinia* and *Isoberlinia* (using morphological and molecular data) and plans to revise *Berlinia* and *Isoberlinia* as part of her PhD thesis.

MCKEY see Andary

MENDONCA-FILHO Is working on the cytotaxonomy of *Machaerium* Pers. and revising Sect. *Oblonga* (Benth.) Taub. (*Leguminosae-Papilionoideae*) (PhD. Theses). He needs fruits of *Machaerium* for germination and offers in exchange, identifications of *Machaerium*.

MOREIRA needs seeds of *Macroptilum atropurpureum* and offers in exchange seeds of tropical legumes.

NASH is conducting detailed analysis of *Sophoreae* for alkaloids for taxonomic and activity studies. He needs any seeds, leaves or bark of *Baphia* sp., *Baphiastrum* sp., *Alexa* sp., *Lonchocarpus* sp. or *Derris* sp. He offers in exchange, detailed chemical data and information on active components.

PLANCHUELO is directing a project that combines taxonomic studies of wild species of *Lupinus* from South America with evaluation of cultivated lupins as a grain crop for marginal lands in Central Argentina. She needs herbarium specimens of *Lupinus* and *Crotalaria* and offers in exchange, herbarium specimens of Central Argentinan Legumes.

POKLE is undertaking a revision of genus *Alysicarpus* Desv. in India. (funded by University Grants Commission, New Delhi.). He needs information on type material in the herbaria especially from Australia, China, Africa, Egypt and seeds of *Alysicarpus* species (packet of at least 40 seeds) and can reimbursement postage or other costs. He offers in exchange, any legume material from the region, either herbarium sheets, seeds or wet preservations, or literature of Indian *Alysicarpus* Desv.

SIMPSON is continuing her work on the phylogeny of *Caesalpinieae* and needs material of *Caesalpinieae* for molecular work. She offers in exchange, Central Texas Legumes.

THOTHATHRI is undertaking a survey and study of the less known Legumes of South India (The States of Tamil Nadu, Andhra Pradesh, Kerala and Karnataka are covered). He offers in exchange, reprints on Asiatic Legumes (Taxonomy & Systematics).

VIDAL see LOC

VANDERBORGHT is maintaining a *Phaseoleae-Phaseolinae* collection, chiefly centred on wild *Phaseolus* and *Vigna* species. He offers and needs seed material of the same. List of the 180 taxa included in the collection is available on the World Wide Web on <http://www.br.fgov.be>.

VEASEY is beginning a study of the selection of herbaceous forage Legumes for the use in mixed pastures.

VERESHCHAGINA is working on the reproductive biology and systematics of the annual species of *Medicago* and cleistogamy in annual species of *Medicago*.

VIRASSO is working on the Systematics of the flora local to Sante Fe, Argentina and offers in exchange, herbarium specimens.

RECENT LEGUME LITERATURE

Eds. Note: Authors names in all capital letters are Bean Bag Readers. Their full names and addresses are listed in the Nov 1998 Bean Bag Directory available on the www server of the Royal Botanic Gardens, Kew, United Kingdom. See "From the Editors" for the URL. All correspondence should be addressed directly to them.

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- ADEMA, F. 1998. Notes on Malesian Fabaceae (Leguminosae: Papilionoideae): 3. The genera *Dioclea*, *Luzonia*, and *Macropsychnanthus*. *Blumea* 43(1): 233-239 Keys.
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Erata

S. Bandyopadhyay

Due to unavoidable printing mistakes the following is an Erata to The Identity of *Lasiobema horsfieldii* Miq. (Leguminosae: Caesalpinioideae) by S. Bandyopadhyay & K. Thothathri (1993). J. Econ. Tax. Bot. 17(3): 693-696.

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